

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Chi-Ming Che et al.

Application No.: Not Yet Assigned

Confirmation No.:

Filed: Concurrently Herewith

Art Unit: N/A

For: **MATERIALS FOR  
ELECTROLUMINESCENT DEVICES**

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Examiner: Not Yet Assigned

**INFORMATION DISCLOSURE STATEMENT (IDS)**

MS Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement accompanies the new patent application submitted herewith.

A full translation of the non-English language references is enclosed.

A copy of each reference on the PTO/SB/08 is attached.

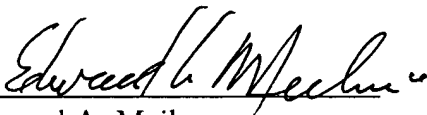
Application No.: Not Yet Assigned

Docket No.: V0690.0013/P013

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-2215, under Order No. V0690.0013/P013.

Dated: January 9, 2004

Respectfully submitted,

By 

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Substitute for form 1449A/B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				Application Number	Not Yet Assigned
				Filing Date	Concurrently Herewith
				First Named Inventor	Chi-Ming Che
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	2	Attorney Docket Number	V0690.0013/P013

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	AA	US-3,172,862	03-09-1965	Gurnee, et al.	
	AB	US-4,356,429	10-26-1982	Tang	
	AC	US-5,061,569	10-29-1991	VanSlyke, et al.	
	AD	US-5,247,190	09-21-1993	Friend, et al.	
	AE	US-6,458,719-B1	10-01-2002	Tsunoda, et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
	BA	GB-1,050,434	12-07-1966	Brown, et al.		
	BB	WO-WO 90/13148-A1	11-01-1990	Cambridge Research and Innovation Limited, et al.		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>	
	CA	"Hole Transporting Materials with High Glass Transition Temperatures for Use in Organic Light-Emitting Devices"; O'Brien, et al.; <u>Adv. Mater.</u> ; 1998, 10, No. 14 pp. 1108-1112		
	CB	"Recent progress of molecular organic electroluminescent materials and devices"; Hung, et al.; <u>Materials Science and Engineering</u> ; R 39 (2002) 143-222		
	CC	"Improved Time-of-Flight Technique for Measuring Carrier Mobility in Thin Films of Organic Electroluminescent Materials"; Chen, et al.; <u>Jpn. J. Appl. Phys.</u> ; Part1, Vol 39, No. 3A, (2000), pp. 1190-1192		
	CD	"Improved Red Dopants For Organic Electroluminescent Devices"; Chen, et al.; <u>Macromol. Symp.</u> ; 125, 49-58 (1997)		
	CE	"Organoboron Compounds. I. A New Synthesis of B-Trialkyl and Triaryl-N-triphenylborazoles"; Groszos, et al.; <u>J. Am. Chem. Soc.</u> ; 81, March 20, 1958, pp. 1357-1360		
	CF	"Boron-Nitrogen Compounds. I. Synthesis of B-Aminoborazines"; Niedenzu, et al.; <u>J. Am. Chem. Soc.</u> ; 81, July 20, 1959, 3561-3564		
	CG	"Convenient Preparation of B-Trichloroborazine"; Rothgery, et al.; <u>Inorganic Chemistry</u> ; Vol. 6, No. 5, May 1967, pp. 1065 – 1066		
	CH	"Electron and hole mobility in tris(8-hydroxyquinolinolato-N1,O8) aluminum"; Kepler, et al.; <u>Appl. Phys. Lett.</u> ; 66 (26), 26 June 1995, pp. 3618 - 3620		
	CI	"Improved Luminous Efficiency of Organic Light-Emitting Diodes by Carrier Trapping		

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				Art Unit	N/A
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Sheet	2	of	2	Attorney Docket Number	V0690.0013/P013

		Dopants"; Hamada, et al.; <u>Jpn. J. Appl. Phys.</u> ; Vol. 40 (2001) pp. L753 - L755	
	CJ	"Electron drift mobility and electroluminescent efficiency of tris(8-hydroxyquinolinolato) aluminum"; Chen, et al.; <u>Applied Physics Letters</u> ; Volume 75, Number 25, December 20, 1999, pp. 4010 - 4012	
	CK	"Influence of the hole transport layer on the performance of organic light-emitting diodes"; Giebeler, et al.; <u>Journal of Applied Physics</u> ; Volume 85, Number 1, January 1, 1999, pp. 608 - 615	
	CL	"Diphenylthienylamine-Based Star-Shaped Molecules for Electroluminescence Applications"; Wu, et al.; <u>Chem. Mater.</u> ; 2001, 13, 2626-2631	
	CM	"Starburst Molecules Based on Hexathienylbenzene Units: Potential Hole-Transport Materials"; Wu, et al.; <u>Adv. Mater.</u> ; 2000, 12, No. 9, pp. 668 - 669	
	CN	"Influence of hole transporting material on device performance in organic light-emitting diode"; Tokito, et al.; <u>Thin Solid Films</u> ; 363 (2000) 290-293	
	CO	"The electroluminescence of organic materials"; Mitschke, et al.; <u>J. Mater. Chem.</u> ; 2000, 10, 1471-1507	
	CP	"Characterization of Hole Transport in a New Class of Spiro-Linked Oligotriphenylamine Compounds"; Bach, et al.; <u>Adv. Mater.</u> ; 2000, 12, No. 14, July 19, pp. 1060 - 1063	
	CQ	"Low molecular organic glasses for blue electroluminescence"; Salbeck, et al.; <u>Synthetic Materials</u> ; 91 (1997) 209-215	
	CR	"EL properties of organic light-emitting-diode using TPD derivatives with diphenylstyryl groups as hole transport layer"; Yamashita, et al.; <u>Thin Solid Films</u> ; 363 (2000) 33-36	
	CS	"Organic electroluminescent diodes"; Tang, et al.; <u>Appl. Phys. Lett.</u> ; 51 (12), September 21, 1987, pp. 913-915	
	CT	"Thermally stable organic light-emitting diodes using new families of hole-transporting amorphous molecular materials"; Shirota, et al.; <u>Synthetic Metals</u> ; 111-112 (2000) 387-391	

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<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.